

What is claimed is:

1. A method for allocating an aggregation bandwidth in a network system including an inter-site connection network which has a plurality of nodes respectively having packet switches,  
5 and a plurality of user sites respectively which has a host or a network connected to said plurality of nodes through access lines, the method comprising the steps of:

when a user site of interest among said plurality of user sites is to be connected to the other site through said inter-site  
10 connection network,

determining a bandwidth of an access line connecting said user site of interest to said network as a minimum bandwidth;

calculating a necessary and sufficient bandwidth for interconnecting said user site of interest to the other user  
15 site; and

allocating a bandwidth to said plurality of nodes based on said calculated bandwidth.

2. The method for allocating network aggregation bandwidth  
20 according to claim 1,

wherein, among paths for interconnecting said plurality of user sites, if a plurality of paths possible to aggregate exist, paths are aggregated with respect to a user site having an allocatable bandwidth smaller than the other user site.  
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3. The method for allocating network aggregation bandwidth according to claim 1,

wherein, when a virtual site having a host or a gateway to other network used by the user is connected to said inter-site connection network, bandwidth allocation is set based on said virtual site regarded as the user site.

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4. The method for allocating network aggregation bandwidth according to claim 1,

wherein when said user site becomes not existent, a path related thereto is deleted, and whether the aggregation for other paths having the same aggregation path ID as said deleted path has been constructed at the destination site or the originating site is investigated; and if the aggregation has not been constructed, a new aggregation relation is established among paths having either the same destination site or the same originating site; else if the aggregation has been constructed at either the destination site or originating site having a larger site bandwidth, then the existing aggregation relation is canceled to obtain a new aggregation bandwidth based on a site having a smaller bandwidth.

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5. The method for allocating network aggregation bandwidth according to claim 1 or claim 2,

wherein, when an access line bandwidth is changed to make an aggregation bandwidth different from either the destination or originating bandwidth, or produce inverted interrelation in the bandwidth size between said destination bandwidth and said originating bandwidth, an aggregation path and an aggregation

bandwidth are newly obtained.

6. The method for allocating network aggregation bandwidth according to claim 1 or claim 2, further comprising the steps

5 of:

in a server provided in said inter-site connection network,  
calculating the aggregation path and the aggregation  
bandwidth; and

when bandwidth resource possible to reserve exists in said  
10 inter-site connection network, transmitting to each transit  
node an indication information of an aggregation path included  
in a bandwidth allocation message to be transmitted in forward  
or backward direction.

15 7. The method for allocating network aggregation bandwidth  
according to claim 6, further comprising the step of:

in the server, specifying a transit node or transit nodes  
through which said bandwidth allocation message is transferred.

20 8. A network system comprising:

an inter-site connection network including a plurality of  
nodes each having a packet switch, and

a plurality of user sites each including a host or a network,  
being connected to each node through an access line,

25 wherein when a user site of interest among said plurality  
of user sites is connected to the other site through said  
inter-site connection network, a bandwidth of an access line

connecting said user site of interest to said network is regarded  
as a minimum bandwidth, and based on a calculation result of  
a necessary and sufficient bandwidth for interconnecting said  
user site of interest to the other user site, a bandwidth is  
5 allocated to said plurality of nodes.

9. The network system according to claim 8, further  
comprising:

a server, which is provided in said inter-site connection  
10 network, for calculating the aggregation path and the  
aggregation bandwidth, and for when bandwidth resource possible  
to reserve exists in said inter-site connection network,  
transmitting to each transit node an indication information of  
an aggregation path included in a bandwidth allocation message  
15 to be transmitted in forward or backward direction.